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ABSTRACT

The overall purpose of this study was to assess nutrition education provided in Texas public schools. The sample was composed of a random selection of 600 Texas school districts. Personnel from 302 school districts responded to the questionnaire concerning the concepts, strategies, and resources used in teaching nutrition the amount of formal preparation of teachers, and the time given to teaching nutrition concepts in various courses. The study revealed that 59.6 percent of elementary school children and 53.8 percent of secondary students are currently receiving some form of nutrition education. In secondary schools, 22.4 percent of the students received nutrition education in homemaking, 21.6 percent in health, and 12.7 percent in biology. At the elementary level, a greater percentage of the students received nutrition education in health classes than in any other class. Home economics teachers provided a significantly greater number of concepts in nutrition than did other teachers. Larger schools provided more nutrition education in health classes than did smaller schools. Lecture was the most commonly used teaching strategy, and textbooks were the most frequently used resource. As teacher preparation in nutrition increased, nutrition education provided also increased. A review of the research, tables presenting data collected from the study, a bibliography on nutrition education, and survey instruments are included. (Author/JD)

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AN ASSESSMENT OF
NUTRITION EDUCATION IN TEXAS PUBLIC SCHOOLS

by

Pasty Spurrier Hallman, Ph.D.

Report of research sponsored by a
Faculty Research Grant, 1981

Stephen F. Austin State University
Department of Home Economics

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ABSTRACT

An Assessment of Nutrition Education

In Texas Public Schools

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The overall purpose of the study was to assess nutrition education provided in Texas public schools. The sample was composed of a random selection of 600 Texas school districts. Personnel from 302 school districts responded to the questionnaire concerning the concepts, strategies, and resources used in teaching nutrition as well as to the amount of formal preparation of teachers, and the time given to nutrition concepts in various courses. The study revealed that 59.6 percent of elementary school children and 53.8 percent of secondary students are currently receiving some form of nutrition education. In secondary schools 22.4 percent of the students received nutrition education in homemaking, 21.6 percent in health, and 12.7 percent in biology. At the elementary level, a greater percentage of the students received nutrition education in health classes than in any other class. When size of school was considered, 2A schools provided instruction for the greatest percentage of students. Homemaking teachers provided a significantly greater number of concepts in nutrition education than did other teachers. Larger schools provided more nutrition education in health classes than did smaller schools. Lecture was the most commonly used teaching strategy and textbooks were the most frequently used resource. As teacher preparation in nutrition increased, nutrition education provided also increased.

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CHAPTER I

REVIEW OF LITERATURE

Importance of Nutrition Education

The importance of nutrition education has long been documented by educators. Various official bodies who have identified necessary components for the education of the youth of America have invariably indicated the necessity of education for the physical as well as the mental body. As early as 1918 the Seven Cardinal Principles of Education (31) developed by the Federal Bureau for Education make that evident. Later, in the 1944 statement of the National Education Association's Educational Policy Commission, one of the ten identified imperative needs of youth was listed as, "To develop good health, physical fitness, and mental health (22)."

Finally, among the Goals for Public School Education in Texas which were adopted by the State Board of Education in 1970, and revised in 1973, is the statement: "Students should achieve physical and environmental health and ecological balance. The student should know about the requirements of personal exercise essential to the maintenance of personal health (32)." Schools have long included activities for physical education, but have often omitted education relative to nutrition, which authorities view as important to physical well-being as is activity.

Research studies have repeatedly emphasized the importance of nutrition education to the health of the family. Kohl and Coples (11) reported that among families studied in Mississippi, knowledge of nutrition seemed to be a part of households with higher incomes and more education than of families with lower incomes and education levels. Research of Lambert

and Schwab (12) showed that eating patterns do change through educational experiences. In their research, a program designed for nutritionally improved diets showed significant changes in eating habits. Schwartz, Dalrymple, and Vivian (17) found that high school nutrition education produced high levels of nutrition knowledge for students who scored above the media of 2.53 on a 4-point scale and who also attended a college or university, or who remained single.

Dr. Hazel Spitze (21), profile writer in the field of Home Economics, writing in The Journal of Home Economics, assigned top priority to nutrition education as an element of family life education. She stated that nutrition education must be provided if home economics is to continue to be a relevant subject for high school students. The Commissioner of the Food and Drug Administration has emphasized the need for national strategies focusing on nutrition education. Spitze also stressed the need for research, new technology, and consumer participation.

Despite the demand for nutrition education and despite the research, it is only in recent years that the need for nutrition education has become a public concern. Public Law 95-166 was passed in 1977 authorizing each state to spend 50 cents per child in federal funds for nutrition education in the schools (29). Carol Foreman (5), writing in The Journal of Nutrition Education, said that newspapers, television, and political speeches indicate that the public is eager for more to be done in the field of nutrition information. She noted that as a response to such concern the 1979-1980 budget of the United States Department of Agriculture provided an increase in funds available for nutrition education.

With the increasing concern among the general public for nutrition education, the government has responded. The allocation of one and one-

half million dollars awarded to Texas by the Federal government for nutrition education is an indication of such response (29). Further indication may be seen by the action of the Department of Education in setting a Nutrition Education Conference to assess kinds of nutrition education programs that exist. The conference was charged with establishing priorities in nutrition education.

The Director of the Department of Foods and Nutrition of the American Medical Association, Dr. Phillip White (23), has stated the following reasons why nutrition education is important:

1. To equip the individual to make wise food choices for health and well-being
2. To maintain good health
3. To save money and avoid waste
4. To evaluate food information
5. To aid the family in the poverty class
6. To reinforce and correct family teaching about food and nutrition.

Another indication of the importance being presently attached to providing nutrition education is a lengthy article found in the October, 1979 issue of The Instructor, a well-respected and widely distributed publication for elementary school teachers. The article provides multiple suggestions for teaching nutrition education effectively (25).

Nutrition Education in the Various States

This upsurge of interest in foods and nutrition has resulted in the production of many educational and informational materials including curriculum guides, films, and other resources. Multiple dissemination

strategies have been employed by certain educators. While some states have begun systematic programs of nutrition education, others have done little. The research is sparotic in revealing what has been done.

Johnson and Butler (9) found that ten states among 31 surveyed, had legislated policy concerning nutrition in public schools. In six of those states, nutrition was included in health. In three states, it was under the school food service, and in one state it was divided between food service, health, and vocational home economics. In the study, Johnson and Butler found that Dairy Council representatives were training teachers in nutrition in three of the states surveyed.

The federal government, recognizing the importance of teaching children about human nutrition, has aided states through various grants and amendments. Action has been seen not only at the national level but also at the state and local levels across the United States. In Broken Arrow, Oklahoma, action was taken after many of the school's adolescents were found to be technically malnourished. Teachers were offered a basic nutrition course for credit on an in-service basis. After the nutrition education campaign, fewer epidemics of colds and influenza were recorded. Following the campaign more students ate Type A lunches, and there was a 40 percent decrease in food waste (4).

In Pennsylvania, a project called the Nutrition Education Development Project was implemented to provide in-service for teachers in basic nutrition. Concepts included in the instruction were:

- function and sources of individual nutrients
- psychological and social development of food habits
- nutritional aspects of meal planning
- use of the United States Recommended Daily Allowances

- nutrition labeling
- nutrition needs during developmental periods
- snack foods and food fads
- weight loss diets
- additives.

Teaching strategies included:

- lectures
- discussion
- guest speakers
- audiovisual aids
- case study and problem solving
- personal diet analyses.

Teachers of the nutrition units were within the following subject matter areas:

- health
- home economics
- physical education
- science
- social studies (6).

In Wisconsin nutrition education curricula have been developed for grades K-12. An interdisciplinary approach is used in that state's instructional program. Disciplines involved in the study are: science, social studies, home economics, agribusiness, physical education, industrial arts, health, and basic skills (9).

In New Mexico, the Dairy Council has provided education for over 750 elementary teachers (9).

Johnson and Butler (9) reported that placement of nutrition education varies as does the educational format for nutrition education in the public schools. Their study did reveal, however, that the school food service took the leading role in the majority of states responding to their study.

In New York State and New Jersey a survey was conducted to obtain data relative to nutrition education for public students in grades K-6. Three-fourths of the teachers surveyed said they taught nutrition education. More teachers of K-3 provided the instruction than did teachers of grades 4-6. Teaching strategies used by the teachers were films, filmstrips, laboratory experiments, posters, and reading. In the study, Cook and others (2) found that a small number of teachers accounted for most of the nutrition education time provided; approximately 20 percent of the teachers taught 60 percent of the time reported for nutrition education. Also, 25 percent taught no nutrition. Little formal training in nutrition was found among the teachers. Less than one-fourth of the elementary teachers had had a college course in nutrition. Even workshops for nutrition education were held infrequently. In New Jersey only four percent of the teachers had attended an in-service in nutrition education, and In New York six percent had attended such programs. However, workshops of other topics were not uncommon. Among the schools, more than two-thirds of the teachers had been attending in-service programs related to other areas of teaching. The survey revealed that among the states surveyed only 2.4 percent of the in-service programs dealt with nutrition.

In 1979, Levine, McChesney, and Brush (13) reported that New Jersey was a state with no legislation concerning nutrition education. As a result, the three professors conducted an assessment of nutrition education

in New Jersey. Their study revealed the need for a coordinated effort for nutrition education. Home Economics teachers who utilized more resources and covered current concepts reached only a fraction of the student population. Other teachers tended to have weak backgrounds in nutrition. It was found that there was a need for reliable sources and innovative methods of presenting material.

In 1976, Cooper and Gore (3) conducted an analysis of nutrition curriculum guides. Results showed that the majority of the concepts corresponded to a great extent to those found in the proposed conceptual framework for nutrition education as outlined by the 1969 White House Conference. The most frequently occurring concepts found in the guides were:

- Food is made up of certain chemical substances that work together and interact with body chemicals to serve the needs of the body.
- The way food is handled influences the amount of nutrients in the food, its safety, appearance, taste, and cost.
- Nutrition is the process by which food and other substances later become you. The food we eat enables us to live, grow, keep healthy and well, and to get energy for work and play.

The state of Louisiana conducted a Needs Assessment of Nutrition Education for the entire state (19). Recommendations from the study included encouraging teachers to increase the amount of time spent on nutrition education and encouraging teachers to obtain more nutrition information. Other recommendations call for the development of curriculum in nutrition education and in-service workshops for teachers.

Among states reporting nutrition education, multiple new and innovative techniques have been developed for teaching nutrition. Various

researchers (20) have reported techniques of teaching most frequently used. These include nutrition summer camps (16), teens teaching nutrition (18), foods and nutrition mini-courses (15), and meal time learning (10). Spitze (2) found that by using games and other discovery learning techniques, students demonstrated high interest in nutrition. In a study she conducted, 62 percent of the students felt that nutrition was an exciting subject to study.

The study of Cook, Eiler, and Kaminaka (2) indicated that background in foods and nutrition which teachers have, such as college courses and workshops, are related to the amount of time spent in teaching nutrition education.

In 1977, Ruth Norman (14), writing in The Journal of Home Economics, recommended methods for effectively teaching nutrition education. Concepts which she emphasized were:

- nutritive value of food
- values and eating behaviors
- factors influencing eating behavior
- the Basic Four Food Groups
- implications of diet on world population and resources.

Nutrition Education in Texas

Within Texas, nutrition education has been provided in a number of ways. The Conceptual Framework for Homemaking Education (27) and The Curriculum Guide for Homemaking Education (28) provide guidelines and directions for the nutrition education which homemaking teachers are expected to teach. Currently 265,000 students are enrolled in Consumer and Homemaking Classes in Texas (7).

Dairy Council, Inc. instituted "Big Ideas," a program of nutrition education, in 1974. The curriculum teaches students to apply the Four Food Group System in selecting foods to meet individual needs. "Big Ideas" includes programs geared to meet the needs of early childhood through adulthood (26).

The state curriculum for secondary school health includes a unit in nutrition. (All Texas high school students are required to take one semester of health.) Concepts treated in the nutrition education unit include:

- individual's nutritional needs
- food selection and eating patterns
- influences of food patterns (33).

Further, the Texas Education Agency has provided a guide for Elementary Health Education (30). Concepts treated include:

- variety in food eating patterns
- factors which influence food choices
- attitudes toward food and eating habits.

The health curriculum materials are currently under revision. Teacher educators have indicated that nutrition education will be a strong component of the revised guides (8).

The Department of Human Resources provides nutrition education for the pre-school children within the state. The target group is all children enrolled in child care programs (1).

Wilkinson and El Maquid (24) conducted a study of Texas High School coaches. They found that coaches provide a significant amount of advice on nutrition to athletes, and that a majority of the coaches felt a need for specialized preparation in nutrition education.

CHAPTER II

PROCEDURE

Purpose of the Study

The overall objective of the study was to assess nutrition education provided in Texas public schools. Specific objectives were:

1. To identify the nutrition concepts being taught within Texas public schools.
2. To determine where the nutrition concepts are being taught.
3. To determine the percentage of students receiving nutrition education in each course of study provided.
4. To determine methods utilized by public school teachers for presenting nutrition education.
5. To determine how much time is allotted to nutrition education.
6. To determine resources used for teaching nutrition education in Texas public schools.
7. To determine preparation of teachers for giving instructions in nutrition education.

Description of the Population

The population for the study consisted of independent school districts in Texas. Within the state there are 1,105 districts.

Selection of the Sample

A list of all independent school districts was obtained from the Texas Education Agency's 1978-1979 TEXAS SCHOOL DIRECTORY. The university statistician and the project directors agreed that 600 or approximately 50 percent of the total 1,105 school districts should be surveyed. Through the use of a table of numbers obtained via the Stephen F. Austin State University Computer Service, a random sample of 600 school districts was chosen.

Questionnaire Design

A two-page questionnaire was designed to obtain data necessary to reach the objectives of the study. The questionnaire was designed to collect the following data:

1. The classes or areas in which nutrition is taught.
2. Formal preparation of nutrition teachers in nutrition.
3. Class periods allotted to teaching nutrition.
4. Numbers of students receiving nutrition education within each instructional area.
5. Resources and strategies used.
6. Concepts treated in nutrition education.

Completion time of the questionnaire was estimated at 20 minutes. Respondents were assured anonymity.

After its original development, the questionnaire was tested by a group of vocational educators enrolled in a graduate class at Stephen F. Austin State University. The final revision may be seen in the Appendix of this report.

Collection of Data

A packet of materials was mailed to the central office of each school district. Packets contained a cover letter explaining the study, the questionnaire, and instructions for providing information relative to nutrition education within the school district. A stamped self-addressed return envelope was enclosed. Six weeks after the original mailing, a follow-up letter was sent to two hundred schools from whom no response had been received.

Analysis of Data

Data obtained through the use of the questionnaires were coded and statistically treated at the university computer center. Statistical measures used were:

1. Frequency table
2. Cross tabulation of frequencies
3. Pearson's Correlations
4. Statistical significance of correlations.

Data were analyzed cooperatively by a university professor of foods and nutrition, and the project director, a teacher educator.

CHAPTER III

Results and Discussions

The sample for the study included 600 school districts in Texas. Completed questionnaires were received from 302 schools providing a return of 50.3 percent. Two hundred fifty-nine of the returned questionnaires were usable ones. The remaining ones were either returned with incomplete data, were unusable due to incomplete answers or were returned after the data had been sent to the computer.

Questionnaires were mailed to the central office of each school district allowing districts an option for the person or persons designed to supply information requested. Data in Table I shows professional positions held by respondents. Among those supplying data for the study were school superintendents, curriculum directors, principals, and teachers. The greatest number (27.8 percent) of questionnaires was completed by classroom teachers. Curriculum directors supplied 22.8 percent of the data, while principals supplied 15.4 percent and superintendents contributed 14.7 percent of the data obtained. Other unspecified school personnel completed 17.3 percent of the questionnaires.

Among the schools represented by the respondents were schools classified as 1A, 2A, 3A, 4A, and 5A. As may be seen in Table II the greatest number of respondents were from 2A schools, while the smallest number was from 1A schools. However, there was a good representation of each of the five sizes of schools. There were 88 size A schools, 49 AA, 47 AAA, 27 AAAA, and 46 AAAAA.

An analysis of the data reveals that 53.8 percent of high school students in Texas receive nutrition education in some form from one or more

TABLE I

POSITION HELD BY RESPONDENTS TO QUESTIONNAIRE

N=259

	NUMBER	PER CENT
SUPERINTENDENT	38	14.7
CURRICULUM DIRECTOR	59	22.8
PRINCIPAL	40	15.4
TEACHER	72	27.8
OTHER	39	15.1
UNKNOWN	11	4.2

TABLE II

PERCENTAGE OF STUDENTS RECEIVING NUTRITION EDUCATION ACCORDING TO SIZE OF SCHOOL

CLASS OF HIGH SCHOOL	MEAN
A (N=88)	49.1%
AA (N=49)	59.0%
AAA (N=47)	53.4%
AAAA (N=27)	55.4%
AAAAA (N=46)	56.8%

high school classes. For the elementary school student, the percentage is greater than for the high school student; 59.5 percent of them receive some type of instruction in nutrition. As seen in Table III, 22.4 percent of all high school students receive nutrition education in homemaking classes while 21.6 percent of all students receive the study in health classes. In biology classes, 12.7 percent receive the instruction.

Table IV shows classes in which nutrition education is provided within the elementary schools. (For the purposes of the study, grades one through eight were considered elementary school.) The highest percent of schools provided nutrition education through health classes; however, many schools had multiple elementary school classes which treated nutrition education concepts. Within health classes, 86.9 percent of the schools offered nutrition education while 71.9 percent also provided it in science classes. Seventy-five (33.9 percent) schools reported homemaking classes in which nutrition is provided. (It should be noted that the majority of public schools in Texas do not offer homemaking as an elementary school subject.) Nutrition education was reported by thirty-seven schools in classes other than the traditional health, science, and homemaking classes.

There were 237 respondents who completed the section indicating where nutrition education is provided for the high school student. (For the purpose of this study, grades nine through twelve were considered high school.) See Table V. Ninety-seven percent, or 230 schools, reported that nutrition education is provided within homemaking classes. Nutrition education provided within health classes was reported by 85.7 percent of the schools. Health is a required course offered in all Texas schools. However, it appears that almost fifteen percent of the health classes do not include nutrition concepts in the curriculum. Biology classes in 124

TABLE III

PER CENT OF STUDENTS RECEIVING NUTRITION EDUCATION FROM VARIOUS SOURCES

SOURCE	PER CENT
HOMEMAKING CLASSES	22.4
BIOLOGY CLASSES	12.7
HEALTH CLASSES	21.6
ALL HIGH SCHOOL CLASSES	53.8
ELEMENTARY CLASSES	59.5

TABLE IV

CLASSES IN WHICH NUTRITION EDUCATION IS

PROVIDED WITHIN ELEMENTARY SCHOOLS

N=221

	NUMBER OF SCHOOLS	PERCENT OF SCHOOLS
HOMEMAKING	75	33.9
HEALTH	192	86.9
SCIENCE	159	71.9
OTHER	32	14.5
NONE	5	2.3

TABLE V

CLASSES IN WHICH NUTRITION EDUCATION IS

PROVIDED WITHIN THE HIGH SCHOOLS

N=237

	NUMBER OF SCHOOLS	PERCENT OF SCHOOLS
HOMEMAKING	230	97.0
HEALTH	203	85.7
BIOLOGY	124	52.3
OTHER	10	4.2
NONE	2	0.8

schools offered nutrition education. Five percent of the schools said that nutrition education is provided in other classes as well as in homemaking, health, and biology.

Table II reveals the average percent of students who receive nutrition education within high schools of various sizes. The smallest schools (A) provide instruction in nutrition for the lowest percent (49.1 percent) of students. The schools which provide such instruction for the largest percentage of students are 2A schools (59.0 percent). Three A schools have nutrition education for 53.4 percent of their students, 4A schools provide it for 55.4 percent of the students, and 5A schools provide it for 56.8 percent of the students.

One explanation for the 2A schools providing instruction for the greatest percentage of their students may relate to the number of students enrolled in homemaking classes. A greater percentage of students within smaller schools are enrolled in homemaking classes than are in larger schools. Since the data showed that 97 percent of all homemaking classes include nutrition concepts, it may follow that the smaller school will show a larger percentage of students receiving nutrition education.

Table VI shows amounts of time allotted to the teaching of nutrition within the various high school classes. Respondents were asked to indicate the amount of time given to nutrition concepts by the number of class periods in which nutrition was taught. Groups included one period, two to five periods, six to ten periods, eleven to twenty periods, and over twenty periods. Among homemaking teachers, the most frequently occurring time grouping allotted to nutrition concepts was over 20 class periods. The median number was in the eleven to twenty class period grouping.

TABLE VI

CLASS PERIODS USED IN TEACHING NUTRITION

N=259

CLASS	1		2-5		6-10		11-20		over 20	
	NUMBER	PER CENT	NUMBER	PER CENT	NUMBER	PER CENT	NUMBER	PER CENT	NUMBER	PER CENT
HOMEMAKING	5	1.9	38	15.0	41	15.0	44	16.9	89	34.6
ELEMENTARY	13	5.0	49	18.9	43	16.6	35	13.5	23	8.8
BIOLOGY	13	5.0	62	23.9	28	10.8	19	7.3	6	2.3
HEALTH	17	6.5	60	23.1	49	18.9	46	17.7	16	6.1
OTHERS	3	1.1	7	2.7	2	0.7	4	1.5	0	0.0

Within elementary classes, the greatest percentage of teachers provided two to five class periods of instruction with the median falling in the six to ten category. For biology classes at the secondary level, the greatest percentage was in the six to ten category with the median falling in the two to five category. For health in the high schools, the greatest percentage was two to five periods with the median falling in the six to ten category. In every class, some teachers reported as few as one class provided for nutrition. In elementary classes, five percent gave no nutrition; in homemaking, 1.9 percent gave none; in biology, five percent provided none; in health, the percentage was 6.5.

Data reflected in Table VII shows preparation which teachers have had for teaching nutrition. Twenty-seven percent of the total group of teachers had had no preparation; 16.8 percent had had a university course; 48.5 percent had attended at least one in-service workshop on nutrition; 4.3 percent had had some unidentified form of nutrition education.

Homemaking teachers were reported to have had more formal education for teaching nutrition than any other group surveyed. Among homemaking teachers, 814 had a university course and 660 had in-service training while only 23 had no formal preparation. For biology teachers there were 424 with a university course, 5121 had in-service, and 2310 with no formal preparation. Among health teachers, two had a course in nutrition; however, 88 had no preparation. More high school teachers reported training for nutrition instruction in the form of in-service than in university courses. Six hundred sixty homemaking teachers had received in-service in nutrition, whereas 88 health teachers and 5121 biology teachers had attended such workshops.

TABLE VII

ANALYSIS OF TEACHER PREPARATION FOR

TEACHING NUTRITION EDUCATION

NONE	27.0%
UNIVERSITY COURSE	16.8%
IN-SERVICE	48.5%
OTHER	4.3%

TABLE VIII

FORMAL TRAINING OF TEACHERS FOR

TEACHING NUTRITION

TEACHER	NONE	UNIVERSITY COURSE	IN-SERVICE	OTHER
HOMEMAKING	23	814	660	136
BIOLOGY	2310	424	5121	74
HEALTH	85	2	88	20
ELEMENTARY	230	302	418	29

When elementary teachers were surveyed, 2310 were reported with no training of any kind in nutrition education while four hundred twenty-four had had a university course. Among elementary teachers reported, 5121 had attended at least one in-service workshop in nutrition.

Concepts which were included in nutrition classes are outlined in Table IX. An analysis of the data shows that among elementary education classes in nutrition, concepts which were used by at least two-thirds of the teachers were the following:

Basic 4 Food Groups
Nutrition and Physical Health
Nutrient Needs of the Child.

Concepts taught by fifty percent of the elementary teachers included those listed above as well as the following:

Nutrition and Psychological Health
Nutrient Sources
Food Selection Based on Sound Nutrition Information.

Concepts treated in high school classes may be seen in Table X. Analysis revealed that at least two-thirds of the secondary school teachers treated the following concepts:

Basic 4 Food Groups
Food Fads and Fallacies
Nutrition and Physical Health
Nutrient Needs of the Young Adult
Nutrient Sources
Nutrient Functions
Nutrient Deficiencies
Relationships Among Exercise, Caloric Intake, and Body Weight.

Concepts taught by fifty percent of the secondary teachers included the following in addition to the above list:

Nutrition and Psychological Health
Nutrient Needs of the Child
Nutrient Classification
Nutrient Characteristics
Food Selection Based on Sound Nutrition Information
Interdependence of Nutrients in the Body.

TABLE IX

CONCEPTS INCLUDED IN NUTRITION EDUCATION CLASSES

BY GRADE LEVEL

CONCEPT	K-3		4-6		7-8	
	NUMBER	PER CENT	NUMBER	PER CENT	NUMBER	PER CENT
BASIC 4 FOOD GROUPS	152	92.1	149	90.3	134	86.5
FOOD FADS AND FALLACIES	63	38.2	86	52.1	92	59.4
NUTRITION AND PHYSICAL HEALTH	103	62.4	116	70.3	118	76.1
NUTRITION AND PHYCHOLOGICAL HEALTH	30	18.2	52	31.5	63	40.6
CULTURAL INFLUENCES ON NUTRITION	39	23.6	47	28.5	62	40.0
SOCIAL INFLUENCES ON NUTRITION	31	18.8	41	24.8	60	38.7
ECONOMIC INFLUENCES ON NUTRITION	27	16.4	43	26.1	52	33.5
NUTRIENT NEEDS OF THE CHILD	119	72.1	123	74.5	98	63.2
NUTRIENT NEEDS OF THE YOUNG ADULT	20	12.1	38	23.0	75	48.4
NUTRIENT NEEDS OF THE PREGNANT WOMAN	3	1.8	7	4.2	18	11.6
NUTRIENT NEEDS OF THE MIDDLE-AGED	1	.6	6	3.6	18	11.6
NUTRIENT NEEDS OF THE ELDERLY	1	.6	5	3.0	17	11.0
NUTRIENT CLASSIFICATION	38	23.0	68	41.2	74	47.7
NUTRIENT CHARACTERISTICS	21	12.7	47	28.5	52	33.5

TABLE IX - Continued

CONCEPT	K-3		4-6		7-8	
	NUMBER	PER CENT	NUMBER	PER CENT	NUMBER	PER CENT
NUTRIENT SOURCES	55	33.3	87	52.7	86	55.5
NUTRIENT FUNCTIONS	27	16.4	62	37.6	71	45.8
NUTRIENT DEFICIENCES	28	17.0	52	31.5	68	43.9
FOOD CARE AND NUTRITION	34	20.6	53	32.1	58	37.4
FOOD SELECTION BASED ON SOUND NUTRITION INFORMATION	56	33.9	84	50.9	77	49.7
AVAILABILITY OF NUTRIENTS	19	11.5	36	21.8	43	27.7
RELIABILITY OF SOURCES OF INFORMATION	8	4.8	21	12.7	33	21.3
ACCEPTANCE OF UNFAMILIAR FOODS	62	37.6	60	36.4	53	34.2
RELATIONSHIP AMONG EXERCISE, CALORIC INTAKE AND BODY WEIGHT	31	18.8	54	32.7	77	49.7
INTERDEPENDENCE OF NUTRIENTS IN THE BODY	9	5.5	26	15.8	45	29.0
NUTRITIONAL MERITS AND SHORT COMINGS OF FOOD SUPPLEMENTS	11	6.7	23	13.9	37	23.9
NUTRITION LABELING AS A SOURCE OF MAKING INFORMED FOOD CHOICES	16	9.7	38	23.0	51	32.9
EFFECTS OF FOOD ADDITIVES	5	3.0	23	13.9	42	27.1

TABLE X

CONCEPTS INCLUDED IN NUTRITION EDUCATION CLASSES

WITHIN HIGH SCHOOL CLASSES

CONCEPT	HEALTH		HOMEMAKING		BIOLOGY	
	NUMBER	PER CENT	NUMBER	PER CENT	NUMBER	PER CENT
BASIC 4 FOOD GROUPS	156	85.7	196	92.5	86	64.2
FOOD FADS AND FALLACIES	123	67.6	188	88.7	41	30.6
NUTRITION AND PHYSICAL HEALTH	159	87.4	181	85.4	85	63.4
NUTRITION AND PHYCHOLOGICAL HEALTH	110	60.4	150	70.8	48	35.8
CULTURAL INFLUENCES ON NUTRITION	68	37.4	160	75.5	31	23.1
SOCIAL INFLUENCES ON NUTRITION	78	42.9	163	76.9	27	20.1
ECONOMIC INFLUENCES ON NUTRITION	77	42.3	184	86.8	33	24.6
NUTRIENT NEEDS OF THE CHILD	104	57.1	187	88.2	61	45.5
NUTRIENT NEEDS OF THE YOUNG ADULT	131	72.0	197	92.9	63	47.0
NUTRIENT NEEDS OF THE PREGNANT WOMAN	68	37.4	189	89.2	35	26.1
NUTRIENT NEEDS OF THE MIDDLE-AGED	59	32.4	130	61.3	32	23.9
NUTRIENT NEEDS OF THE ELDERLY	49	26.9	136	64.2	28	20.9
NUTRIENT CLASSIFICATION	107	58.8	186	87.7	76	56.7
NUTRIENT CHARACTERISTICS	93	51.1	171	80.7	67	50.0

TABLE X - Continued

CONCEPT	HEALTH		HOMEMAKING		BIOLOGY	
	NUMBER	PER CENT	NUMBER	PER CENT	NUMBER	PER CENT
NUTRIENT SOURCES	118	64.8	184	86.8	83	61.9
NUTRIENT FUNCTIONS	111	61.0	176	83.0	83	61.9
NUTRIENT DEFICIENCES	110	60.4	183	86.3	74	55.2
FOOD CARE AND NUTRITION	73	40.1	186	87.7	39	29.1
FOOD SELECTION BASED ON SOUND NUTRITION INFORMATION	95	52.2	194	91.5	43	32.1
AVAILABILITY OF NUTRIENTS	68	37.4	163	76.9	43	32.1
RELIABILITY OF SOURCES OF INFORMATION	55	30.2	139	65.6	31	23.1
ACCEPTANCE OF UNFAMILIAR FOODS	57	31.3	163	76.9	25	18.7
RELATIONSHIP AMONG EXERCISE, CALORIC INTAKE AND BODY WEIGHT	143	78.6	179	84.4	71	53.0
INTERDEPENDENCE OF NUTRIENTS IN THE BODY	85	46.7	149	70.3	75	56.0
NUTRITIONAL MERITS AND SHORT COMINGS OF FOOD SUPPLE-MENTS	75	41.2	148	69.8	37	27.6
NUTRITION LABELING AS A SOURCE OF MAKING INFORMED FOOD CHOICES	57	31.3	188	88.7	27	20.1
EFFECTS OF FOOD ADDITIVES	81	44.5	166	78.3	59	44.0

Homemaking teachers provided a significantly greater number of concepts for nutrition education than did other high school teachers, as may be seen in Table XI.

Teaching strategies used by teachers were multiple and varied. As may be seen in Tables XII and XIII, lecture was the dominant method of teaching used by the teachers. However, other frequently used teaching strategies included were films, bulletin boards, demonstrations, discussions, chalkboard, laboratories, flip charts, transparencies, group process, observations, games, and exhibits.

Strategies with infrequent use (by less than 25 percent of the teachers) were the following: panels, case studies, debates, skits, team teaching, and interviews.

As may be seen in Table XV, resources for teaching were varied. Textbooks were used in 96.7 percent of the classes. Dairy Council materials were the second most frequently used resource with 92.5 percent of the schools using them. Popular magazines were used in 61 percent of schools while professional journals were used in only 41.9 percent of the schools.

Table XVII shows correlation between size of school, amount of nutrition education had by teachers, number of teaching strategies used, nutrition education in elementary schools, and nutrition in the various high school classes. Analysis shows that there was a significant relationship between the size of the school and whether or not nutrition was a part of the health classes. The larger schools provided more nutrition education in health classes than did smaller schools.

As the amount of preparation for teaching nutrition increased among teachers, there was significantly more nutrition education provided in high school homemaking, biology, and health classes.

TABLE XI

Z SCORES FOR ALL CONCEPTS

CONCEPT #	Z SCORE	CONCEPT #	Z SCORE	CONCEPT #	Z SCORE
1	0.6372	11	-11.0695	21	-10.1883
2	-4.9393	12	-12.5778	22	-7.6468
3	-12.3213	13	-5.9969	23	-5.0976
4	-5.0186	14	-7.4633	24	-13.7526
5	-7.7817	15	-4.0170	25	-9.3482
6	-8.3772	16	-5.5058	26	-12.3912
7	-3.2405	17	-6.6755	27	-9.7125
8	-2.3715	18	-9.4777		
9	-7.8963	19	-6.8298		
10	-15.3400	20	-9.5041		

TABLE XII

TEACHING STRATEGIES USED IN NUTRITION EDUCATION CLASSES

N=240

STATEGIES	NUMBER	PER CENT
LECTURE	237	98.8
FILM	232	96.7
GROUP PROCESSES	138	57.5
DEMONSTRATION	187	77.9
EXHIBIT	122	50.8
BULLETIN BOARD	211	87.9
ROLE PLAY	72	30.0
CHALK BOARD	169	70.4
TRANSPARENCY	140	58.3
FIELD TRIP	107	44.6
GUEST SPEAKER	116	48.3
PANEL	29	12.1
CASE STUDY	42	17.5
DEBATE	14	5.8
SKIT	54	22.5
POSTER OR FLIP CHART	155	64.6
FLANNEL BOARD	65	27.1
GAME	124	51.7
TEAM TEACHING	31	12.9
INTERVIEW	27	11.3
DISCUSSION	170	70.8
LABORATORY	163	67.9
OBSERVATION	132	55.0

TABLE XIII

RANK ORDER OF TEACHING

STRATEGIES ACCORDING TO FREQUENCY

OF USE IN NUTRITION EDUCATION CLASSES

1. LECTURE
2. FILM
3. BULLETIN BOARD
4. DEMONSTRATION
5. DISCUSSION
6. CHALK BOARD
7. LABORATORY
8. FLIP CHART OR POSTER
9. TRANSPARENCIES
10. GROUP PROCESS
11. OBSERVATION
12. GAME
13. EXHIBIT
14. GUEST SPEAKER
15. FIELD TRIP
16. ROLE PLAY
17. FLANNEL BOARD
18. SKIT
19. CASE STUDY
20. PANEL
21. TEAM TEACHING
22. INTERVIEW
23. DEBATE

TABLE XIV

TEACHING STATEGIES USED IN

FIFTY PER CENT OR MORE

OF CLASSES REPORTED

---

1. LECTURE
2. FILM
3. BULLETIN BOARD
4. DEMONSTRATION
5. DISCUSSION
6. CHALK BOARD
7. LABORATORY
8. FLIP CHART OR POSTER
9. TRANSPARENCY
10. GROUP PROCESS
11. OBSERVATION
12. EXHIBIT
13. GAMES

TABLE XV

RESOURCES USED IN TEACHING NUTRITION

N=241

	NUMBER	PER CENT
TEXTBOOKS	233	96.7
OTHER BOOKS	185	76.8
POPULAR MAGAZINES	147	61.0
PROFESSIONAL JOURNALS	101	41.9
PROFESSIONALS	61	25.3
DAIRY COUNCIL MATERIALS	223	92.5
EXTENSION MATERIALS	152	63.1
OTHER	52	21.6

TABLE XVI

RANK ORDER OF

USE OF RESOURCES REPORTED

---

1. TEXTBOOKS
2. DAIRY COUNCIL MATERIALS
3. OTHER BOOKS
4. EXTENSION MATERIALS
5. POPULAR MAGAZINES
6. PROFESSIONAL JOURNALS
7. PROFESSIONALS
8. OTHER

There was also a significant difference in the provision for nutrition education in the high school among schools which provided nutrition education in the elementary schools and those which did not provide it in the elementary grades. Finally, as seen in Table XVII, there was a significant positive relationship between the amount of nutrition education taught and the number of teaching strategies employed by teachers.

TABLE XVII

PEARSON'S CORRELATION COEFFICIENTS

FOR SELECTED VARIABLES IN RELATION TO

AMOUNT OF NUTRITION EDUCATION PROVIDED

VARIABLES	HOMEMAKING	BIOLOGY	HEALTH
SIZE OF SCHOOL	-.0316 NS	-.0152 NS	.1645 **
AMOUNT OF NUTRITION EDUCATION OF TEACHER	.2548 ***	.1612 **	.1914 ***
INTRODUCTION OF NUTRITION EDUCATION IN ELEMENTARY SCHOOL	.2620 ***	.1218 *	.1778 **
NUMBER OF STRATEGIES	.1672 **	.2167 ***	.1149 *

NS Not Significant
* Significant at the .05 level of confidence
** Significant at the .01 level of confidence
*** Significant at the .001 level of confidence

CHAPTER FOUR

Summary and Recommendations

Analysis of the data acquired through this study prompts the following summary statements.

Summary

1. Nutrition education is a public concern.
2. Research revealing where nutrition education is being provided is sparodic.
3. In Texas, 53.8 percent of high school students are currently receiving nutrition education in some form.
4. In Texas, 59.5 percent of elementary school students are currently receiving nutrition education.
5. Within elementary schools, nutrition education is most often provided via health classes.
6. Nutrition education is provided in almost all (97%) homemaking classes; however, only 22 percent of all high school students were reported as receiving nutrition education through homemaking.
7. Homemaking teachers use a significantly greater number of periods for teaching nutrition education than do other teachers.
8. A majority of homemaking teachers surveyed provide 20 or more class periods for nutrition education.
9. In elementary school classes, the majority of teachers spend two to five periods in nutrition education.
10. Biology classes tended to allot six to ten periods for nutrition education.
11. Health classes tended to provide two to five class periods for nutrition education.
12. Teacher preparation for teaching nutrition education tended to be from in-service workshops.

13. Twenty-seven percent of teachers had had no preparation for teaching nutrition education.

14. Among all teachers, the concept, Basic Four Food Groups, was taught.

15. Homemaking teachers provided a significantly greater (.01 level) proportion of nutrition education concepts than did teachers of elementary, health and biology teachers surveyed.

16. In elementary schools, concepts treated by at least two-thirds of the teachers were:

    1. Basic 4 Food Groups
    2. Nutrition and Physical Health
    3. Nutritional Needs of the Child

    In secondary schools, two-thirds treated:

    1. Basic 4 Food Groups
    2. Food Fads and Fallacies
    3. Nutrition and Physical Health
    4. Nutritional Needs of Young Adults
    5. Nutrition Sources
    6. Nutrition Functions
    7. Nutrition Deficiencies
    8. Relationships Among Exercise, Caloric Intake and Body Weight

17. Lecture was the dominant teaching technique used.

18. Most frequently used resources for teaching nutrition were textbooks, and Dairy Council Materials.

19. Teachers with more preparation in nutrition provided a significantly greater amount of nutrition education than did teachers with no formal training.

Recommendations

Recommendations include the following:

1. Further study should be conducted to determine the role of school lunch service in providing nutrition education in Texas and the attitude of administration toward providing nutrition education.

2. Homemaking teachers should design strategies to share expertise in nutrition education.

3. Classes other than homemaking should provide more nutrition education than is currently being provided.

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APPENDIX

STEPHEN F. AUSTIN STATE UNIVERSITY
NACOGDOCHES, TEXAS 75962

DEPARTMENT OF HOME ECONOMICS
BOX 13014, SFA STATION

October 8, 1980

Dear Curriculum Director:

All across the country nutrition education is of prime concern to educators today. Enclosed is a survey for use in collecting data to assess nutrition education in Texas public schools. The survey is part of a study being conducted through the Home Economics Department at Stephen F. Austin State University as a university research project.

If you will complete the survey with information from your school district the study will be greatly enhanced. Note that you are not asked to give your name. Participants will remain anonymous with questionnaires being returned in unmarked envelopes. Information will be assembled and reported as a composite with no specific school cited. It is anticipated that this information will be made available through state publications to Texas educators.

Your cooperation in the study will assist in providing valuable information to Texas school personnel. We appreciate your assistance!

Sincerely,

Patsy Hallman

Patsy Spurrier Hallman, Ph.D.
Associate Professor

Survey of Nutrition Education

1. Position of respondent: ____ Superintendent ____ Curriculum Director
   ____ Principal ____ Teacher ____ Other: _____

2. Check the classes or areas listed below in which nutrition is taught in your school.

   Elementary (1-8):
   ____ a. homemaking
   ____ b. health
   ____ c. science
   ____ d. none
   ____ e. others (specify) _____

   High School (9-12):
   ____ f. homemaking
   ____ g. health
   ____ h. biology
   ____ i. none
   ____ j. others (specify) _____

3. Indicate formal preparation which your teachers of nutrition have had in nutrition.

Teachers	Number who have no formal preparation	Number who have had University course in Nutrition	Number who have had In-service education in Nutrition	Number who have had other
Homemaking				
Elementary				
Biology				
Health				
Others				

4. Indicate the number of class periods allotted to teaching nutrition.

Subject	1	2-5	6-10	11-20	over 20
Homemaking					
Elementary					
Biology					
Health					
Others					

5. Total school enrollment:
   Elementary _____ Secondary _____

6. Total number of students receiving nutrition education in your school:
   Elementary _____ Secondary _____

7. Indicate the number within the high school student body who receive nutrition education within various subject matter areas.
   Homemaking _____ Biology _____ Health_____ Others _____

8. Resources used in teaching nutrition:
   _____ a. Text books
   _____ b. Other books
   _____ c. Popular magazines
   _____ d. Professional journals
   _____ e. Professionals (such as dietitians or doctors)
   _____ f. Materials from the Dairy Council
   _____ g. Materials from the Excension Agent
   _____ h. Others (specify) _____

9. Teaching stratagies used:
   _____ a. lecture
   _____ b. film
   _____ c. group process
   _____ d. demonstration
   _____ e. exhibit
   _____ f. bulletin board
   _____ g. role play
   _____ h. chalk board
   _____ i. transparency
   _____ j. field trip
   _____ k. guest speaker
   _____ l. panel
   _____ m. case study
   _____ n. debate
   _____ o. skit
   _____ p. poster or flip chart
   _____ q. flannel board
   _____ r. game
   _____ s. team teaching
   _____ t. interview
   _____ u. discussion
   _____ v. laboratory
   _____ w. observation

10. Check the level and concepts which are included in your nutrition curriculum.

	Elementary			High School		
	K-3	4-6	7-8	Health	Homemaking	Biology
a. Basic 4 Food Groups						
b. Food fads and fallacies						
c. Nutrition and physical health						
d. Nutrition and phycho-logical health						
e. Cultural influences on nutrition						
f. Social influences on nutrition						
g. Economic influences on nutrition						
h. Nutrient needs of the child						
i. Nutrient needs of the young adult						
j. Nutrient needs of the pregnant woman						
k. Nutrient needs of the middle-aged						
l. Nutrient needs of the elderly						
m. Nutrient classification						
n. Nutrient character-istics						
o. Nutrient sources						
p. Nutrient functions						
q. Nutrient deficiences						
r. Food care and nutrition						

s. Food selection based on sound nutrition information						
t. Availability of nutrients						
u. Reliability of sources of information						
v. Acceptance of unfamiliar foods						
w. Relationship among exercise, caloric intake, and body weight						
x. Interdependence of nutrients in the body						
y. Nutritional merits and short comings of food supplements						
z. Nutrition labeling as a source of making informed food choices						
aa. Effects of food additives						

STEPHEN F. AUSTIN STATE UNIVERSITY

FACULTY RESEARCH PROPOSAL

For Fiscal Year 1980 - 1981 **Date** 11-17-79

1. **Name of applicant (chief investigator)** Patsy J. Spurrier

2. **Title of Proposal** AN ASSESSMENT OF NUTRITION EDUCATION IN TEXAS PUBLIC SCHOOLS

3. **Proposed period of the study** 1980-81 4. **Department** Home Economics

BUDGET SUMMARY

Applicant complete first column only.

		REQUESTED by Applicant	RECOMMENDED by Research Council
5.	**Wages**		
	Remuneration to Researcher	$ -0-	$
	Secretarial	$ -740-	$
	Graduate Student Research Assistants	-3600-	
	Other		
6.	**Equipment**		
7.	**Expendable Supplies**	-843-	
8.	**Travel**		
9.	**Other Expenses**		
10.	**Total**	$ 5183	$

11. **Amount of time researcher expects to spend per day on project** 1 hour

12. **List for the last five years those in which you received Faculty Research Grants** 1976, 1978

13. **Are you working toward, or are you expected to complete an advanced degree?** no

14. **Have facilities been approved by your departmental chairman?** yes 15. **Is space available?** yes

Patsy J. Spurrier
Signature of Applicant

QC 355 - (R- 1-79)

FACULTY RESEARCH PROPOSAL

TITLE: AN ASSESSMENT OF NUTRITION EDUCATION IN TEXAS PUBLIC SCHOOLS

PRINCIPAL INVESTIGATOR: Patsy Spurrier, Associate Professor
Department of Home Economics
Stephen F. Austin State University

ABSTRACT: The overall objective of this study is to assess nutrition education provided in Texas public schools. Public interest in nutrition education for children and youth and federal concern for this aspect of education has made the topic of prime interest to educators at this time. Although nutrition education is a part of home economics education as well as a part of health education, no study has been made in Texas to determine what nutrition education is actually being provided to the students. This study will randomly select 600 schools in Texas to be surveyed relative to nutrition education. Questionnaires sent via of the school superintendents will go to four school personnel: one elementary principal and the chairpersons of each of the departments of health, biology, and homemaking. The questionnaires will gather information relative to which nutrition concepts are being presented, methods of teaching utilized, courses in which concepts are presented, percentage of students receiving the education, resources utilized, and education which teachers have received to prepare them for teaching nutrition. Data will be treated with analysis of variance and other descriptive techniques.

OBJECTIVES

1. To identify the nutrition concepts being taught within Texas Public schools.
2. To determine where the nutrition concepts are being taught.
3. To determine the percentage of students receiving nutrition education in each course of study.
4. To determine methods utilized by public school teachers for presenting nutrition education.
5. To determine how much time is allotted to nutrition education.
6. To determine resources used for teaching nutrition education in public schools.
7. To determine preparation of teachers for giving instructions in nutrition education.

REVIEW OF LITERATURE

The importance of nutrition education has long been well documented by educators. However, only in recent years has the need for such education become a public concern.

Various official bodies of educators have questioned the role of education in the lives of youth. The groups have invariably indicated that a part of basic education should be learning to care for the physical body. See the famous Seven Cardinal Principles of Education developed by the Federal Bureau for Education in 1918 (8). Further it may be noted that in the 1944 statement of NEA's Educational Policy Commission, one of the ten identified imperative needs of youth was listed as, "To develop good health, physical fitness, and mental health (12). Schools have for many years included activities for physical education, but have usually omitted education relative to nutrition, which is as important to physical well-being as is activity.

The 1979 National Nutrition Week sponsored by the American Dietetic Association had as its theme, "Set the Pace! Take the Food Way to Good Nutrition" (14). That theme was planned to emphasize the importance of nutrition to good health. It was ADA's attempt to tie together food and fitness; nutrition and physical activity.

With today's increasing concern among the general public for the provision of nutrition education in the public schools, the government's response may be seen. The allocation of one and one-half million dollars awarded to Texas by the Federal govern-

ment is an indication of this wide-spread concern for such education (15).

Further indication may be seen by the action of HEW in setting a Nutrition Education Conference to assess kinds of nutrition education programs that exist. The conference has been further charged with priorities in nutrition education (14).

Carol Foreman (3), writing in Nutrition Education Today said that newspapers, television, and political speeches heard today indicate that the public is eager for more to be done in the field of nutrition information. As a response to such concern the 1979-80 budget of the USDA provided an increase in funds available for nutrition education.

Recently people concerned with world poverty, hunger, and starvation have tried to influence corporate re-thinking on the use of protein resources. Such action is prompted by philosophy which may be based on nutrition facts but is in some cases based on inaccurate information and/or myth. (1)

Norman (9) writing in the Journal of Home Economics, pointed out the strong role which values and attitudes play in selection of food by the American people. While students may learn nutrition facts, patterns of eating may not change. Research has suggested that effective nutrition education must include strategies for attitude and value changes. Eating habits must be positively changed in the American child and youth.

Research of Lambert and Schwab (6) showed that eating patterns can be changed through education experiences. In their research, the program for changed diets showed a mean percentage change in

eating habits of 62.73.

On the other hand, Schwartz,Dalrynple, and Vivian (10) found that high school nutrition education produced high levels of nutrition knowledge only for students who scored above the media of 2.53 on a 4 point scale, who also attended a college or university, or who remained single.

Food myths continue to plague the American public, allowing diet quackery and food fads to bilk the public of thousands of dollars annually. More importantly, good nutrition is often replaced by poor nutrition on the advice of such quackery, causing poor health rather than the good health they purport to provide. Ellington Darden (2) writing in the Journal of Home Economics, said there are two main reasons why the athletic world continues to be filled with myths: one is pressure applied by coaches to win at all costs, causing food to be used as a possible medium for help; and two, the psychological effect that an athlete receives from belief that a certain food improves performance.

Research studies have repeatedly emphasized the importance of nutrition education on the health of the family. Kohl and Coples (5). reported that among families studied in Mississippi, all households with higher income and more education had better food consumption patterns than families with lower incomes and educational levels.

Dr. Spitze (11), of The Illinois Teacher, has assigned top priority to nutrition education as an element of family life education if it is to continue to be a relevant subject for high school students. In addition, the Commissioner of the Food and

Drug Administration has emphasized the need for national strategies focusing on nutrition education as well as on research, new technology, and consumer participation (11).

This brief overview of research which has already been done suggests a strong need for further study of nutrition education in the public schools. The writings of Dr. Hazel Spitze may summarize thoughts of many educators, researchers and public leaders.

JUSTIFICATION

Texas is among the many states concerned with methods of implementing mandatory nutrition education within the public schools. The basic reasons for such concern may be seen in the Review of Literature which pointed out that there is concern not only from educators but from the general public and from the federal government for nutrition education.

Little has been done in Texas to determine what is being taught in the area of nutrition. While the Conceptual Framework for Homemaking Education in TExas (13) calls for the study of nutrition, no survey has been made to determine the extent of such study. In addition, an interview with Ms. Carolyn Kline (4), the Texas Education AGency personnel charged with responsibility for nutrition education in TExas, revealed that no study has been conducted to determine where nutrition is being taught in other areas. Ms. Kline indicated in the interview that health classes are charged with the responsibility of providing the course of study, but that there has been no check to determine if that course is meeting the needs for nutrition education.

During the 1979-80 academic year funds from Texas for nutrition education have been distributed to the REgion Service Centers in order for the Centers to provide in-service teacher education. The present study will assess the first results of that in-service.

Since Nutrition is one of the five major areas of study (. Foods and Nutrition, 2) Clothing and Textiles, 3) Family and Child, 4) Housing, and

5) Home Management and Family Economics) within the field of Home Economics, it seems logical for a home economist to study the problem of nutrition education. The researcher has received two previous faculty research grants. From each,both published articles and papers read have resulted.

Results of the study should have immediate value for many educators. Curriculum supervisors may use the material to assist in decision making relative to placement of nutrition education within both elementary and secondary schools. School officials charged with the responsibility of in-service teacher education may determine by the results of the study if nutrition education is needed for teachers. Pre-service education in the fields of elementary education, home economics, and health may be improved with information relative to the use of nutrition education concepts in the public schools.

A major, and immediate, outcome of tne investigation of the present study will be in planning preservice for home economics education majors. Further, instructors of nutrition classes offered at Stephen F. Austin State University may find the information valuable in planning concepts for the university level courses.

Interest in the study has been shown at the state level. See the letter which follows.

PROCEDURE

The plan for this study has been developed in order to reach the overall objective of assessing nutrition education in Texas Public Schools. The study will involve an investigation of nutrition education in both elementary and secondary schools of Texas. In order to procede with the research in an orderly manner the following steps are planned.

1. Complete the review of literature.
2. Develop a questionnaire to gather information relative to the following:
   a. level at which nutrition education is offered
   b. courses in which nutrition education is offered
   c. nutrition concepts treated
   d. time spent with nutrition education
   e. resourses used in teaching nutrition education
   f. teaching strategies employed
   g. percentage of total student body enrolled in classes containing nutrition education
   h. preparation teachers of nutrition education have received for teaching the subject
3. Test the questionnaire using volunteers from a graduate class made up of public school teachers.
4. Using a stratified random sample, select 600 schools in Texas to whom the questionnaire will be sent. Use the 10 areas of the

state determined by the Texas Education Agency Home Economics consultant areas of responsibility in order to obtain the stratified sample.

5. Develop a packet composed of the following elements.
   a. A letter of transmittal to the school superintendents of the school selected to participate in the study.
   b. A questionnaire for each of the following department chairpersons:
      1) Home Economics
      2) Health
      3) Biology
   c. A questionnaire to be given to one elementary principal within the school district.
6. Mail the packet to the 600 school superintendents selected.
7. Send a follow-up letter to each school which does not respond in a reasonable length of time.
8. Tabulate data.
9. Use the services of the Stephen F. Austin State University Computer Center to treat data with analysis of variance. Determine if differences exist in amounts of time spent in teaching nutrition education, in specific concepts taught, in percentage of students reached with the information, and in training received by the teachers.
10. Cooperate with a professor of nutrition and foods within the SFASU Home Economics Department to interpret data.

11. Write a report of the completed study.
12. Seek publication of an article resulting from the study.
    Possible journals for publication include:
    a. Journal of Home Economics
    b. Journal of The American Dietetic Association
    c. Journal of Nutrition Education
    d. The Texas Outlook
13. Prepare a paper to be read at the state meeting of the Texas Home Economics Association.

The research will be directed by Patsy Spurrier during the academic year of 1980-81. Funding is requested for employing a graduate assistant to assist in carrying out the study.User Services in the Stephen F. Austin State University Computer Center will be consulted for for advice in developing the questionnaire in such a way that a statistical package may be used in data treatment. A professor of nutrition and foods from within the home economics department has agreed to assist in interpretation of data.

PROPOSED WORK SCHEDULE

September/October, 1980	Complete Review of Literature
November, 1980	Develop and test Questionnaire
December, 1980	Plan School Selection Process
January, 1981	Mail Surveys
February, 1981	Receive data; prepare for Computer Center
March, 1981	Interpret Data
April/May, 1981	Prepare Article for publication

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BUDGET

ITEM	EXPLANATION	AMOUNT
Wages	None requested for researcher	0
	Secretarial Help (6 weeks)	$740
	Graduate Assistant	3600
Equipment	none	0
Expendable Supples	Stationery/Envelopes	85
	Reproduction	108
	Postage	650
Travel	none	0
TOTAL		$ 5183

Texas Education Agency

• STATE BOARD OF EDUCATION
• STATE COMMISSIONER OF EDUCATION
• STATE DEPARTMENT OF EDUCATION

201 East Eleventh Street
Austin, Texas
78701

November 13, 1979

Ms. Patsy Spurrier
Associate Professor
Department of Home Economics
Box 13014
Stephen F. Austin State University
Nacogdoches, Texas 75962

Dear Ms. Spurrier:

Thank you for your phone call of November 12 in which you described your proposed plan to survey selected teachers in secondary schools in Texas concerning nutrition education. You mentioned that teachers of homemaking, health, and science might be included and that you would be involving the staff of the homemaking education program at the Texas Education Agency.

Teachers in secondary schools as well as elementary teachers and school food service personnel compose the target population for in-service programs under the FY 79 Nutrition Education and Training Program. Therefore, such a study would have potential for supplying useful information for future planning.

All correspondence associated with the study should be directed to superintendents. Prior approval of the Commissioner of Education also might be necessary.

Please let me know about the progress of your application.

Sincerely yours,

Carolyn Klein

Carolyn Klein, R. D.
Coordinator for Nutrition Education
Division of Curriculum Development

CK:pb

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